



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **11144596 A**(43) Date of publication of application: **28.05.99**(51) Int. Cl. **H01H 59/00**(21) Application number: **10194082**(22) Date of filing: **09.07.98**(30) Priority: **18.07.97 US 97 897075**(71) Applicant: **TRW INC**(72) Inventor: **BERENZ JOHN J  
MCIVER GEORGE W  
LEE ALFRED E**(54) **MICRO ELECTRIC MACHINE SYSTEM SWITCH**

the fatigue can be minimized.

## (57) Abstract:

COPYRIGHT: (C)1999,JPO

**PROBLEM TO BE SOLVED:** To extend the life and improve the mechanical reliability by providing a circuit board for forming a pivot point, a pin rotatably supported thereby, a beam rotatable between two positions, at least one pair of electric contacts and a field plate to which a voltage for rotating the beam is applied.

**SOLUTION:** A rigid beam 54 of a metal such as Ni is rotated around a pin 58 rotatably mounted on a circuit board 52 by a metal collar 60 or the like forming a seesaw type arrangement. Contacts 64, 66 on the circuit board 52 are conformed to the contacts 60, 62 of Au or the like formed on the lower surface of the beam 54. A DC voltage is applied to a field plate forming a parallel plate capacitor in conformation to a pair of electric contacts 68, 70 on the circuit board 52, the beam 54 is rotated by the electrostatic attracting force and repelling force generated between the contacts 68, 70 and the beam 54 to operate an RF switch 50. When the pin 58 is formed of Ni or the like, this forms an RF input port. The beam 54 is never bent or twisted, and

